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WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING AUGUST 4, 1923.
(Except as otherwise indicated.)

MANDAN:

Agronomy.

Harvest of practically all wheat, oats, and barley in both experimental and feed fields was completed by August 1.

Replicated plats of Dakota Kursk, Siberian and Proso millets, and of Sudan Grass and Sorghum were cut for hay on August 1. As the plats were narrow and the plants unusually tall, cutting was done with a binder. This seems to be a very satisfactory way of handling these crops, for hay has the advantage of leaving them free from trash and dirt which accumulates when they are harvested in the usual manner.

A second cutting of alfalfa is being taken from one of the large feed fields. On account of cool and cloudy weather curing is very slow. Bunch-attachments were used on the mowers with very satisfactory results.

Temperatures during the week have been abnormally low and as a result crop growth has been slow.

Cooperative Grazing Experiment.

The cattle in all pastures made the lightest gains during July that have been made since the experiment started. This may be accounted for in part by the fact that the flies were very bad during this month and in part to a reduction in feed in some of the pastures. The steers of the 100-acre and 70-acre pastures made gains of between 40 and 50 pounds per head, which is about 25 pounds per head below the seven year average for the month of July. The cattle in the other pastures made gains varying from 10 to 25 pounds per head. Some steers showed a loss for the month.

One steer in the reserve pasture died the last of July. The cause of his death is not exactly known.

Arboriculture.

Cultivation and hoeing of all nursery stock and permanent tree plantings was completed this week. On August 2 fourteen and one-half pounds of Caragana seed from this year's crop was planted in the field east of the barn. A Columbia garden planter was used for this planting with apparently excellent results. Seeding was at the rate of 1 pound to 500 feet of row.

Mr. E. J. George returned to the station on August 2, having finished his inspection work for this season. Mr. A. W. Emerson was in Gillette, Wyoming, on August 1 and is four days behind his original schedule. He reports very bad roads in northwestern South Dakota. On one occasion in attempting to cross a creek his car became mired and the water went completely over his engine. The car had to be towed to town and the engine taken apart and cleaned before it could proceed on its own power. Mr. R. W. Hansen was in Great Falls, Montana, on August 1.

Horticulture.

All field plats of fruit and vegetables have been gone over with the cultivator and hoe. Harvesting of small fruits and of vegetables from the Acre Garden continued during the week. The raspberries are about finished, with most varieties yielding a fair crop. The yield was much influenced by the poor condition of last year's canes. This year the new canes are growing vigorously and give promis of a good crop for next year.

Mandan, contd.:

The Acre Garden continues to give good results. Peas, wax beans, and early beets are now finished, while tomatoes, cucumbers, egg-plant, sweet corn, carrots, and cabbage are at their best.

Some further breeding work consisted of straight selections of small fruits from seedlings. Sweet corn and tomatoe selections have also been made. Some of the sweet corn shows a marked tendency towards earliness, being ready for cooking in 75 days instead of the usual 90 days required for the Golden Bantam variety. Budding in the fruit nursery was started the latter part of the week.

Visitors during the week included Mr. D. E. Stephens, Superintendent Dry Farm Branch Station, Moro, Oregon; Mr. E. C. Hilborn, Manager Northwest Nursery Company, Valley City, North Dakota; Mr. George Will, President, Oscar Will and Company, Seedsmen and Nurserymen, Bismarck, North Dakota, Mr. J. Allen Clark, Office of Cereal Investigations.

Maximum temperature 77, minimum 44; precipitation 0.15 inch.

BELLE FOURCHE:

The weather continues abnormally cool and rainy. There has been a trace or more of rain every day for the last 15 days. In most cases the rains have been too small to do much good, but large enough to delay work. The second cutting of alfalfa is ready to put up but the damp weather is delaying stacking.

All of the dry land grains except two plats of spring wheat are now in the shock. Yields of all grain crops will be considerably above the average. The cultivated crops are looking unusually good. Sorghum is now heading out. It now appears that the amount of damage done to the corn by grasshoppers eating the silks was very small, as very few ears show signs of not having been properly fertilized. A great many grasshoppers in this section are dying of a fungus disease.

Maximum temperature 94, minimum 51; precipitation .62 inch. Total precipitation for July 4.54 inches.

ARCHER:

The weather conditions during the past week have, for the most part, been cool and humid with low hanging clouds. The maximum temperature for this season, 90 degrees, occurred July 30. Following this, local showers covering rather large areas have been frequent. The station received .22 inch July, .61 inch August 2, with two small showers between making a total of .90 inches. These rains were very timely as the crops were beginning to burn.

The cool weather has checked the growth of the corn and has been of aid to the sun-flowers. Some of the latter have attained a height of seven feet, while the corn is four and one-half feet. Some of the earlier sun-flowers are in bloom and the corn is in silk. Winter wheat which survived the winter is ripe, while that which emerged in the spring is green. This makes maturity very uneven and increases the difficulty of handling this crop. Spring cereals are doing well except the oats on the continuous cropped plats. The work at the station has consisted of weeding and over-hauling harvest machinery.

Maximum temperature 90, minimum 51; precipitation .90 inch.

NORTH PLATTE:

Threshing was begun on Tuesday and a two-acre field of oats and 28 plats of winter wheat were threshed. That day a half inch of rain fell and foggy or cloudy weather followed, preventing any other threshing until Friday noon. Progress yesterday and today has been slow as the grain is not thoroughly dry.

The increase field of oats which was on potato ground, irrigated last year but not this, made a yield of 88½ bushels per acre. The best yield of winter wheat threshed was 40.3 bushels per acre. The average yield of winter wheat, not counting the plats reseeded with spring wheat, is about 20 bushels per acre. The plats reseeded with spring wheat are making from 5 to 8, or 9 bushels per acre. This wheat was practically ruined by rust. Row crops continue to make a fine growth.

HAYS:

The weather continues hot and dry. Rain storms continue to come close, but just far enough away to miss this locality.

All feed crops are suffering from drought and grasshoppers. The broadcasted feed crops are suffering very much.

The second crop of alfalfa was harvested on the bottom land plats this week, August 2. It was very light but was drying up and being eaten up by the grasshoppers, so it was decided best to harvest. The field surrounding the plats was being mown so a hundred acres of grasshoppers would have moved immediately in on the plats.

Other work during the week consisted largely in soil sampling, spreading of poison for grasshoppers, a small amount of tillage work, and enlarging of main drainage ditches.

GARDEN CITY:

Weather conditions have been quite changeable during the past week. The maximum temperature on Monday was 85 and on Wednesday the temperature reached 103, the highest recorded so far this year. Two showers totaling .24 inch were recorded.

All row crops are making a rapid growth. All the cowpeas on the dry land project are vining; corn is beginning to tassel; and some of the early maturing sorghums are heading.

Work this week has consisted of cultivating and hoeing fallows and roadways.

Mr. W. M. Osborn of the Lawton Station and Mr. C. J. Stauber of the Woodward Station were visitors this week.

Maximum temperature 103, minimum 59; precipitation .24 inch.

DALHART:

The past two weeks have been the hottest of the season. Last week the temperature was up to 99 degrees two days. There was very little wind stirring at this time which made it very oppressive - a sultry heat. This week there has

Dalhart, contd.:

been considerable wind, some of it quite hard. The last day of July the temperature rose to 104. This is the hottest day for this section since July 13, 1917. Only one day has been recorded here that was hotter than this and it was on July 13, 1913, when the temperature got to 105. Monday and Friday of this week were the hottest days this week. Friday the temperature was 99 degrees. The remainder of the week has been cooler. This week there was a small shower which netted .39 inch, the first precipitation in three weeks.

Field operations have been in progress continuously in spite of the dry weather. Some cultivating was done this week on the later plantings. Considerable hoeing was done during the week on the increase fields, cotton, and along the drive. If this dry weather keeps up there is going to be some harvesting going on around here. The first date of Sudan will be ready to harvest the first of the week. The broom corn is suffering more than any other crop on the station. The first dates of milo are firing just a little. All other crops have a good color and are looking prime. The listing methods, milo, and all other listing is much smaller than the other planting. On the M.C. plats the listing is not over one-fourth as high as on the fallow and other plats. The listed corn is tasseling at from 24 to 30 inches, while the other corn ranges from five to six feet. This does not go to show that the listing is wrong, however, because it may come out and make better yields than the surface planting.

The sparrows and blackbirds are giving this station plenty of trouble with the dates that are heading. One man is kept busy shooting birds every day in order to protect the yield as much as possible. Somewhat over a hundred have been killed the past week. The sparrows are getting so wise that they are hard to kill, but the close watch on the plats is doing the work as it keeps the sparrows out to a large extent.

Soil samples show that the soil moisture is still pretty good. The first foot is the driest but still has plenty of reserve moisture. The moisture extends to the depth of the sampling, six feet. The crop fields are still in good shape, since they are clean of weeds and the soil is in good tilth. The ranges are so dry at this time that they would burn if started. The crops in this section look so much better than they do just a little way west that this looks like a Paradise.

Maximum temperature 99, minimum 61; precipitation .39 inch.

WOODWARD:

The past week has been very hot and dry with a maximum temperature of 105. There was a small shower totaling .41 inch on the night of July 28, Saturday, which relieved the situation temporarily, but the effects of this are about gone and the sorghum leaves are again curling during the day time.

Work has consisted of some cultivation, mowing weeds, fixing fences, picking grapes, peaches, etc.

Maximum temperature 105, minimum 68; average wind velocity 6.4 miles; evaporation 2.895 inches.

JUDITH BASIN:

The past week has been one of extremes, with reference to climatic conditions. The warmest day of the year occurred on July 30, when a maximum temperature of 90 degrees was recorded and strong hot winds prevailed. The following day, however, was the coldest of the summer season, with a minimum temperature of 39 degrees. Unusually cold weather has prevailed during the remainder of the week and frequent showers have been received. Moisture conditions during July have been almost ideal for crop growth. A total precipitation of 3.20 inches was received during the month, while a good rain of at least .50 inch occurred at intervals of about seven days. The average rainfall for July is 1.92 inches.

Due to the cold weather all crops are unusually late and harvest has not yet commenced. Unless more favorable ripening weather is received, there is danger that much of the spring wheat in this locality will be frosted. Crop growth during the past week has been at a stand still. Alfalfa has attained a good second growth and a fair second crop is assured, but in most instances it has been impossible to remove the first cutting of alfalfa from the land, due to the continued wet weather.

Visitors during the week were J. T. Sarvis and L. Moomaw of the Office of Dry Land Agriculture; H. L. Walster of the North Dakota Agricultural College; J. A. Clark, G. A. Wiebe and T. R. Stanton of the Office of Cereal Investigations; Clyde McKee and I. J. Jensen of the Montana Experiment Station.

Maximum temperature 90, minimum 39; precipitation .75 inch.

HUNTLEY, report July 28:

The hot weather of a week ago and the fore part of this was broken on the twenty-fourth by a violent thunder storm. Precipitation to the amount of 1.57 inches fell during the night. Most of this rain was received in the form of a torrential shower lasting about an hour and a half. The character of the downpour was such that runoff was excessive and it is doubtful if much of the moisture entered the soil. Some damage was done to crops by lodging and washing out.

Harvesting operations were resumed on the dry-land plats on the twenty-seventh. The remaining plats of oats and about half of the spring wheat have been cut this week.

Poison bran mash was spread over the corn plats in the rotations in an effort to control the grasshoppers which are flocking from the grain plats to the corn.

Maximum temperature 105, minimum 55; precipitation 2.22 inches.

HUNTLEY:

Unseasonably cold and cloudy weather has prevailed during the greater portion of the week. Frequent showers have kept the surface of the ground too wet and sticky to permit much field work being done though some harvesting was accomplished on the lighter soils.

Rainfall for the month of July totaled 3.17 inches which is 1.96 inches above the 13-year average at this station and incidentally the largest amount that has ever been recorded here during that period.

Huntley, contd.:

Corn and other late crops which were showing the effects of drought and hot weather two weeks ago are making a good growth and seem to have recovered almost completely with the advent of more favorable conditions.

Maximum temperature 94, minimum 44; precipitation .77 inch.

SHERIDAN:

Three heavy showers fell the first part of the week of July 28, with a total of 2.10 inches of precipitation. Partially cloudy and sultry weather prevailed for the rest of the week and until the thirtieth. The past few days have been cloudy and exceptionally cold for this time of the year and light rains have fallen at intervals. Considerable haying still remains to be done in this section. Very little work with hay has been possible during the past two weeks; however, and much hay is spoiling in the field.

Nearly all of the small grain on the station has been harvested. One variety of winter wheat still remains green - Buffums. Stem rust is present on this variety, the only instance of rust on any grain at this station during the past four years. Spring wheat on fall and spring plowing, on corn ground, and two plats on fallow has been harvested during the last three days. The remainder of the spring wheat, on fallow and green manure, is ripening very slowly. All of the spring wheat that has ripened was injured somewhat by the heat and dry weather before the last rains. Some damage has been done by grasshoppers around the edge of the plats.

Corn, sorgo, and other forage crops are growing well. Grasshoppers are eating the silks off a large part of the corn, however.

Mr. O. R. Mathews visited the station on the thirtieth and Mr. W. L. Quayle was here on the thirty-first.

Maximum temperature 98, minimum 39; precipitation 2.10 inches week July 28, .19 inch week August 4.

DICKINSON:

The weather has been cool most of the week and grains have ripened slowly. Rust has continued to develop and while the main wheat will not be greatly affected, late planted fields will be reduced in yield and quality.

All oats on the main Rotations were cut during the week. Wheat will be ready to cut the first of next week. Several of the wheat plats have lodged badly. Early millet varieties were cut on the third. Millet has made the heaviest growth in a number of years. All of the wheat and barley varieties have been harvested as well as most of the oat varieties.

Corn has made rapid development during the past two weeks. The crop is taller than the average and if frost holds off until full maturity the yield will be close to the station maximum. Dry weather is needed to mature the crop.

Flax seeded on the Rotations May 1 is ready to cut. Late seeded flax is now in full bloom, tall, and relatively clean. Most all flax in this area now promises a good yield.

Visitors of the week include T.R.Stanton, J.A.Clark, J.H.Martin, and J.C.

Dickinson, contd.:

Maximum temperature 91, minimum 42; precipitation .37 inch. July rainfall amounted to 4.66 inches.

AKRON:

All plat harvesting was finished by Tuesday evening of this week. The old McCormick binder was repaired earlier in the month and came in very handy the last five days of the harvest period when it was possible to run two binders. Winter wheat ripened very rapidly the last few days before it was harvested and was ready the minute the last of the spring wheat was harvested. The station force was then directed to the Cereal Nursery with the exception of one man who was delegated to the plowing of the early-plowed plats. Plat E of the M.C. series was plowed and subsoiled first, then the other 48 plats constituting the early plowed lot were plowed and packed in order. A start was made on the sheep rotation barley stubble field which is seeded to fall rye. The thresher was started Saturday on the barley field of the sheep rotation 51. Mr. Lewis T. Leonard arrived Friday evening and remained until Saturday evening, taking notes and procuring samples of the Legume Innoculation Experiment.

Maximum temperature 94, minimum 59; precipitation .03 inch.

COLBY:

Weather conditions were excellent for threshing this week, except for one day when precipitation in the amount of .20 inch interferred. All D.L.A. plats have been threshed and weighed. Winter wheat threshed out about as anticipated. The unofficial yields of the 46 winter wheat plats on the project are summarized as follows:- Average for entire project is 5.5 bushels per acre; average of 30 summer tilled plats is 3.6 bushels per acre; average of three following corn is 7.6 bushels per acre; average of five on early fall plowing is 7.7 bushels per acre; average of two listed is 6.6 bushels; average of one late fall plowed is 10.0 bushels per acre; average of two stubbled in is 14.9 bushels per acre; one after milo yielded 10.8 bushels per acre; one after pinto beans yielded 10.7 bushels per acre; and one after rye for green manure yielded 8.2 bushels per acre.

Yields of oats were approximately as good as any yields which have ever been produced on the station, the tweleve oat plats averaging 46.1 bushels per acre. The highest oat plat was after summer tilled and was 67.2 bushels per acre, which is the highest yield ever produced on the station.

Yields of spring wheat were slightly above the previous average. The ten spring wheat plats yielded an average of 12.2 bushels per acre. The highest yielding plat being the continuous early fall plowed which yielded 16.0 bushels per acre and the lowest on fall plowing after corn for a yield of 7.3 bushels per acre.

Yields of barley ranged from 14.5 bushels per acre to 54.4 bushels per acre. The average for the project being 35.6 bushels per acre.

Before cleaning winter wheat tested from 38 to 54 pounds per bushel. The low test being on those summer fallow plats which were exceptionally weedy. Commercial fields of winter wheat in the county are running about the same way for test, as it is impossible to take out the weed seed without taking out a great deal of wheat. Wheat will probably reclean to between 44 and 56 pounds per bushel.

Colby, contd.:

Oats threshed out clean and the test runs between 20 and 30 pounds per bushel. Barley also threshed out fairly clean with the exception of beards, and tests from 32 to 42 pounds per bushel. Spring wheat threshed out clean and tests from 47 to 56 pounds per bushel.

So far we have had no excessively hot days. The corn has not dried to any appreciable extent yet but a good rain is needed. Most of the early corn is just getting to the roasting ear stage. Sorghums look good.

Summer tilled plats are free from weeds but are relatively loose at the present time.

TUCUMCARI:

The past week has been very disastrous to crops on the station and throughout much of the county, maximum temperatures ranging from 97 to 104, with a hot south wind prevailing several days. Precipitation since June 25 has measured 0.66 inch and all station crops except those planted as late as June are suffering greatly with the exception of those on fallow. Broadcast cane is in some cases dead, while all row crops will still revive with precipitation, although firing is extensive.

Sudan in the south field was cut and shocked; increase sumac was cultivated and hoed; trees and shrubs were watered; and the windmill tower is being constructed. It appears a fairly good well has been secured, machine pumping indicating a five to seven gallon per minute flow. Mill will be in operation early in the week.

On a trip to Amarillo a week ago with J. R. Horton, U. S. Entomologist, corn borers were found in practically all corn fields, although the infestation was light across the Texas line, where no corn has been grown for some years. Abundant rain has been received in most sections around Amarillo, and corn, other row crops, wheat and oats, are excellent. Pastures apparently are undergrazed, due to the fact that the grass is unusually good, while the cattle have been greatly reduced in numbers the past few years.

Maximum temperature 104, minimum 61; precipitation 0.03 inch; evaporation 2.854 inches; wind velocity 5.4 miles.

LAWTON:

The average maximum temperature over a 12-day period from July 24 to August 4 inclusive, was 103. Hot winds have parched the county on nine of the 12 days designated. At the present writing there is no indication of relief. Corn was already burned before this period and harvest was immediately necessary.

Sorghum crops have stood up remarkably well but there is but little hope now. A fair crop of grain is set on many of the varieties but the weakened plants sapped by chinch bugs and parched by the hot winds are loding quite rapidly in many instances. Immediate relief in the form of rain might make a fair yield of grain possible in many instances. If present conditions continue, maturity of the grain is not at all probable.

Cowpeas on all rotations were harvested on the thirtheth. The yields of hay were very light, ranging from 950 to 1900 pounds per acre.

Lawton, contd.:

Cotton is standing the drought as well as any other crop but as yet it has fruited very lightly and the present intense heat and hot winds appear to be interferring with pollination.

Crop failures, except in all small grains and the low market price received in that connection present a highly discouraging condition to the Oklahoma farmers, and it is intensely reflected in their verbal discussions.

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OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING AUGUST 11, 1923.
(Unless otherwise indicated.)

HAVRE:

Weather during the last two weeks has been cool. Small grains have been ripening slowly but normally.

Corn is growing but the cool weather has retarded maturity. However, with a normally late fall the early dent varieties should mature. Harvest started with oats and barley on August 1.

Spring wheat is now ready. This is much later than usual for the harvest date at this station.

Precipitation during the growing months has been above the normal with 1.93 for May, 4.86 for June, and 3.65 for July.

For the past week the maximum has been 80, the minimum 40, with .46 inch precipitation.

Messrs. Leroy Moomaw, J. T. Sarvis, and Dr. Walster, Agronomist at North Dakota, were visitors at the station on July 30 and 31.

SHERIDAN:

Showery weather was prevalent during the most of the week, although but little rain fell on the station. The first part of the week was exceptionally cool, but the last two days have been warm.

More spring wheat plats ripened and were harvested at intervals during the week until yesterday the last, the four plats on Methods of Fallow, were cut. The grain seems to be much better developed in the later ripening plats.

Threshing was started Thursday, the varieties of field peas being threshed that day. Threshing of oats in the Rotations and check plats, and the 60-day variety was completed yesterday (Saturday). Yields were much better than had been expected ranging from 22.5 bu. per acre on disking in Rotation 576 to 65.0 bu. on fallow in Rotation 8. MCD alternate fallow yielded at the rate of 64.4 bu. The yields by different methods were as follows:

After corn		After Small Gr.								
Disked	S.P.	Disked	S.P.	F.P.	S.Till	G.M.	Sub.S.	List	Sod	Ave.
52.3	47.8	32.8	39.2	36.3	56.4	50.8	43.8	27.2	40.3	45.6

The average yield was about 3.0 bu. less than last year, and there was considerable greater differences in the yields from the different methods of cropping, corn ground, S. Till., and G.M. plats running higher, and the other methods lower.

Maximum temperature 83, minimum 49; precipitation .04

MANDAN:

Agronomy.

The past week has been cool for this time of year. Corn is in excellent condition and gives promise of a better crop than last year. Some of it has started to dent.

The second crop of alfalfa from the feed fields is being hauled in today.

The later seeding of wheat in the Continuous cropping series is being harvested today. A few plats of flax for the Office of Cereal Investigations are also being cut.

Cooperative Grazing Experiment.

The flies have not been bothering the cattle so much this month, and they appear to be putting on normal gains. Feed in the 30-acre pasture is getting short. The Brome grass pasture is in good condition, and the grass has made considerable growth during the past two weeks.

Work continued during the week on the dam which is being constructed in the Reserve pasture. Three or four more days should practically complete it.

Arboriculture.

Thirty-five pounds of Pin cherries, and eighty-five pounds of Chokecherries, were gathered from trees on the station. Most of this seed has been planted in the field east of the barn. Hoeing and cultivating of all field and test plantings have been completed. Very little further weeding is likely to be needed this year.

Mr. Emerson reports the roads in Wyoming in such bad shape at Douglas that he will not attempt to visit three cooperators in the vicinity of Cheyenne, but will proceed east to the Van Tassell and Lusk territory and back into South Dakota. Mr. Hansen should be at Harlowtown, Montana on August 11.

Horticulture.

During the past week all suitable help has been used on the budding of seedling fruit stocks. Last year three men experienced in this work were hired, but the percentage of successful buds being very disappointing, the work is being done this year by the regular station staff.

Mandan, continued:

Visitors at the station during the past week include Mr. A. E. Aldous, U. S. Geological Survey; Dr. Jacob David, Mt. Ararat, Persia; Mr. Dickinson, Superintendent, Indian School, Bismarck, North Dakota, and Mr. N. Levine, Office of Cereal Investigations.

Maximum temperature 85, minimum 52; precipitation .80 inch.

ARDMORE: Week ending August 4.

The total precipitation for the month of July was .61 inch. This may be compared with the 11-year normal for the same month which is 2.29 inches. During the period from June 10 to the last of July there was not sufficient rainfall at any one time to be of any value to crops. Fortunately, however, the weather for the most part was cool during this period and small grain crops did not suffer greatly for the lack of moisture. Corn and all forage crops were somewhat retarded in their growth.

A rain totaling .98 inch on the 3rd and 4th of this month greatly benefited all crops that were not harvested. Corn and cane is now making a rapid growth.

Threshing was started during the week but discontinued because of rain.

Maximum temperature 97, minimum 51; precipitation 1.08 inches.

ARDMORE:

Rain amounting in the aggregate to 1.43 inches was recorded from the 5th to the 7th, inclusive. This precipitation together with about one inch the latter part of the previous week effectively broke the long drought. The prospects are now excellent for a forage and corn crop where no damage was done by hail.

There has been much damage by hail in the surrounding county during the past two or three weeks. On the 7th the crops over a large area in almost every direction from the station were completely destroyed by hail. This storm completely destroyed 55 acres of cane and 25 acres of millet on the station. The field where the damage was done is located approximately one and one-half miles from the rotation plats where no damage was done. The loss in feed will make it necessary to purchase a large amount of feed for the dairy cattle and beef cattle work.

Threshing on the station is well under way and will be completed next week, provided weather conditions are favorable. One field of barley, containing 22.5 acres, has been threshed. The yield was about 35.0 bushels per acre.

Maximum temperature 90, minimum 51; precipitation 1.43 inches.

ARCHER:

The weather for the past week has been marked by a high humidity with fogs during the early mornings and sometimes extending considerably into the day. This condition has caused .01 inch of precipitation for days during the past week. On the 8th, a storm amounting to .80 inch was recorded. It came in three distinct showers; hence there was was but very little run-off.

These conditions have made it necessary to confine the work at the station to weeding and the preparation of machinery for harvest. The winter grain and the crested wheat grass will be harvested immediately and the early barleys are about ripe. Some of the early seedings of the early oats are in the last stages of maturity and the sun-flowers will be ready for silage in the near future, also the Kurst millets are nearly ready to harvest for hay. On the whole the crops are very good, except that rust is very prevalent on certain varieties of grain. However, Acme and Monab are practically free while Kota has considerable but not nearly so much as Marquis. Kota and Erivan are about equal in respect to rust infection. The appearance of Acme and Kota in the fields of farmers to whom this seed was given is very good and there will be a heavy demand for these wheats for seed next spring.

Maximum temperature 83, minimum 53; precipitation .92 inch.

AKRON:

The sheep-rotation, barley stubble field to be seeded to rye was started Saturday and completed Monday, thus completing the early fall plowing. Threshing was continued, the two sheep rotation barley fields and the two sheep rotation winter wheat fields were finished by Wednesday morning. Attention was next directed to the Cereal Variety Oats, which were threshed by Thursday evening. Friday and Saturday the rotation oats, the rotation barley, and one increase block each of Fulghum oats and White Smyrna barley, were threshed. Barley on the sheep rotation fields, 2 acres, yielded 18.4 bushels per acre. The winter wheat on the sheep rotation fields yielded 8.2 bushels per acre on the fallow, and 7.0 bushels per acre on the green manure rye. The highest yield of oats on the rotation block was from M.C.C. which yielded 30.6 bushels per acre. The lowest yield was from rotation 42 where plat E gave a yield of 6.1 bushels per acre. Opata plums in the orchard are being picked. Trees thus far picked have averaged a little better than one bushel per tree. Sapas are becoming ripe and will be next to be picked.

Maximum temperature 92, minimum 54; precipitation .06 inch.

NORTH PLATTE:

Threshing has progressed intermittently during the week. The D.L.A. plats have been finished and about one more day will complete the threshing on the station. Oats are the best grain crop this season. The average yield of the 62 D.L.A. oats plats was 56.4 bushels per acre. A 7-acre variety field on the bench averaged 70.4 bushels per acre, with a maximum yield of 83.2 bushels per acre for the Burt variety.

North Platte, continued:

Continued wet weather has caused watergrass to become very troublesome in parts of the D.L.A. project. Two rains during the week totaled 2.54 inches of precipitation. The corn prospect is the best witnessed in this locality since the station was established.

HAYS:

Although the total rainfall for the week was 1.69 inches the crops continue to roll badly. It looks as if the crops are suffering as much as before the rain.

The stand of corn continues to grow thinner, the stalks breaking down. A very few stalks have made shoots. Kafir is from two to three feet high and just beginning to head. Milo for some reason is a little slower to commence heading. Milo is very much better on the fallowed plat than on other plats, being considerable thicker and a foot higher than that on the continuously cropped plats. Milo suffered less hail damage, or made a better recovery, so that the stand is much better than that of the kafir. It is now suffering much more than the kafir from drought and probably that is the reason for it being slower to commence heading.

Work during the week has consisted largely in working down the plowed ground, cultivating of sorghums and spreading of poison for grasshoppers.

Maximum temperature 102, minimum 66; precipitation 1.69 inches.

GARDEN CITY:

Growing crops on the station were severely damaged by the hail and wind storm on the evening of August 4. All sorghum crop leaves were shredded and a great many of the stalks were broken down. Corn that was surface planted was almost flat after the storm but has recovered to a certain extent since that time. The forage sorghums that were beginning to head were nearly destroyed. Cowpeas and Sudan were practically stripped of their leaves.

No doubt hail did the most damage on the station but in the surrounding country wind was severe enough to destroy buildings and up-root trees. Several buildings in Garden City were damaged severely by the wind which bordered on a cyclone. The town of Leoti, about fifty miles from the station, was practically destroyed and several people were seriously injured.

The truck growers in the Arkansas Valley were probably the heaviest losers, as practically all of their crop was destroyed by the hail.

A rainfall of 2.37 inches was recorded for the night of August 4, most of which fell in about forty-five minutes. A large amount of washing took place on the Dry Land project.

Garden City, continued:

Crops on both the Dry Land and irrigated project have made a remarkable recovery from the damage. Milo seemed to make the most rapid recovery.

All early fall plowing and listing were completed this week. Maximum temperature 97, minimum 65; precipitation 3.07 inches. Precipitation for the year 24.87 inches or 7.3 inches above the normal.

DALHART:

Conditions are getting severe in the Panhandle. Dry weather has continued without sign or rain the past week. The days have not been as hot as the week previous although the temperature reached the 100 mark on the 4th. There has been some wind,--just enough to make the days cool off somewhat. No hot winds occurred this week.

The grass on the range is all dry and would burn readily if a fire should get started. Field crops as a whole are still looking good. The broom corn is making the poorest showing of any of the crops. It is firing to the tops. The Sudan grass is next. The first date had to be harvested the first of the week before too many leaves dried up and dropped off. The drilled Sudan and millet are being harvested today. The Sudan is about 24 and the millet 16 inches in height. The second date of Sudan will be harvested the first of the week. The crops on all the D.L.A. rotations are looking fine and are making much better showing than those in the varieties. The field corn is holding out well and good sized ears are already set. The soil is getting pretty dry now as evidenced by the last sampling. If it does not rain soon this country is going to be in a hard shape.

Some visitors were here during the week from various parts of the state. They state that crops are looking much better here than farther down the line. It seems that below Channing and above Texline the crops are in bad shape while this section immediately surrounding Dalhart is the garden spot. This summer has taken a large toll on the trees here at the station. The largest number of trees have died this summer than any year previous. This is occurring in the thick plantings of locust, elm and ash, which the Forest Service recommended to let go back to nature. It is quite likely that this planting should all be removed if this keeps up.

TUCUMCARI:

Crops have suffered severely the past week, for the drought has continued now for seven weeks. During this period 0.73 inch of rain has been received, the lowest for this period of any year since records have been kept in this vicinity. Milo is in head on most plats, while the May 1 dates of Red Amber and Feterita are ripening. Broadcast cane has died to some extent, while the remainder is firing extensively. Listed crops are withstanding the drought much better than surface planted crops.

Tucumcari, continued:

Sudan was hauled during the week, while four plats of variety test cowpeas were harvested. Yields of both cowpeas and Sudan grass will be light. Due to lack of water, trees, shrubs, and lawns present a very poor appearance.

Much time was spent during the past week working on the wells. The one which was recently deepened apparently has a good flow of water, but has caused continual trouble as the result of sanding down, necessitating pulling pipe and sucker rod a number of times.

Maximum temperature 101, minimum 65; precipitation 0.07 inch. Evaporation 2.916 inches. Wind velocity 5.8 miles per hour.

BIG SPRING:

Weather conditions during the past two weeks have remained about the same, namely, hot. Although a fairly good rain fell about the middle of July, all crops are in need of moisture at the present time. Some of the sorghums have started to burn considerably.

The first date of planting of Milo, Kafir, Dwarf Feterita, Reed's Kafir and the common feterita was harvested August 10, as were also the second and third dates of common feterita. As this was the first grain to ripen in this vicinity, considerable damage was done by the birds. Cowpeas in the rotations were harvested for hay this week, as were also the two increase fields of Sudan grass.

The leaf worm is reported to be doing considerable damage to cotton in various districts of the county. As yet, no signs of them have been noticed on the station.

Mr. E. F. Chilcott visited the station on July 30. During the next five days Mr. Chilcott and the writer, Mr. F. E. Keating, visited the Texas substation located near Sonora, and also the Federal Station at San Antonio, Texas.

LAWTON:

Crop conditions continued to depreciate during the past week. Feed crops throughout the county have largely been harvested on the upland. Sorghum crops on the station have held up remarkably well. A few of the varieties and some of the early date plantings will make a little grain. Maturity, however, is premature and the quality will be very poor.

Dwarf feterita continues to make a very satisfactory showing. Its development and growth are quite rapid up to the blooming period. From that stage maturity appears to be slow and uneven.

Lawton, continued:

Some of the early planting dates of the grain sorghums will be harvested within a few days.

Sunrise kafir has done remarkably well on creek bottom land both for the station and at least two farmers.

The blooming period for cotton appears to be pretty well completed. The number of bolls that are set is extremely small and most farmers have given up hope of producing anything worth while.

The average maximum temperature for the past 19 days is 102 degrees. The range for the maximum temperature for the same period has been from 97 to 107.

The last rain of any advantage to plant growth fell July 13. Grasshoppers continue to damage plant growth of all kinds.

HUNTLEY:

The weather continued cool throughout the week and crops, though showing a shortage of moisture, have benefited by the lower temperatures. Showers have threatened during some part of every day but the actual precipitation has been light.

The remaining plats of small grain were harvested and the grain on the previously harvested plats was reshocked to facilitate drying. Weeds are making a strong growth in the stubble this season, especially on the winter wheat plats. Such a condition has not been present here for several years due to the scarcity of precipitation after harvest. Heavy rains during the latter part of July left enough moisture in the surface soil this year to start weed growth when the grain was removed.

Threshing has commenced in this community and the yields reported so far are a little better than average for winter and spring wheats.

Station visitors this week include Director F. D. Farrel, of the Kansas Station, and Mr. George Morgan, of the Havre Station.

Maximum temperature 88, minimum 48; precipitation .02 inch.

WOODWARD:

The past week has been very hot and dry with a maximum temperature of 105, and a maximum temperature of five days in the week of over 100, with no precipitation.

Woodward, continued:

All crops are now suffering somewhat from drought. Kafir and milo leaves are curling every day but look fresh again by morning. Broom corn is firing considerably at the base. Kafir on the D. L. A. plats is beginning to head. Some apples and peaches and several hundred pounds of grapes have been picked. Grapes are also showing the effect of the hot, dry weather, some varieties being very badly shrivelled while others are standing up very well.

Other work has consisted of cultivating and cleaning up scattering weeds around corners, etc.

Mr. E. F. Chilcott, the Superintendent, returned this week from a trip to Big Spring and other stations in Texas.

Maximum temperature 105, minimum 67; evaporation 3.267 inches.
Average wind velocity 8.6 miles per hour.

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WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING AUGUST 18, 1923.
(Unless otherwise indicated.)

HAVRE:

Weather during the last week has begun to resemble autumn in that the daily range in temperatures is rather high. The maximum temperatures are about as they have been for the last month but the minimums are starting down slightly. The maximum for the past week was 92 on the 13th and the minimum 49 on the 12th. Minimum temperatures for the other days have been in the fifties.

Grain crops have been ripening rather slowly and naturally. Harvest of commercial fields of oats and the later seeding of wheat on the plats has been in progress during the week. Wheat and barley varieties are now all completed with one variety of oats yet to be harvested. Some of the reseeding of winter wheat was mowed this week before maturity as the thistles were making a rapid growth and it was apparent that they would be so large that harvest with a binder would be impossible.

Visitors during the week: Messrs. A. E. Aldos and Byrtle Linfield of the General Land Classification work of the Geological Survey.

SHERIDAN:

Threshing has occupied the time during the greater part of the week. A light sprinkle on the evening of the 14th, followed by damp weather the next day, prevented threshing on the 15th. It was necessary to take some time also for taking care of the grain, putting more bracing in the implement shed, cutting some of the flax plats, and seeding the August 15 Rates and Dates of winter wheat.

Flax has been ripening very unevenly. In some of the plats there has been considerable new growth since the heavy rains of the latter part of July, in some cases amounting to more than the original growth. This has delayed the harvesting of some of these plats, and II-85 still remains to be harvested.

Prospects for forage crops and corn still continue good. Although the most of the silks have been eaten from the corn by the grasshoppers, the greater part of the ears appear to be well filled. Some of the corn in the Rotation field is in the soft dough stage. Some of the early flint varieties are now ripe, and it is intended to harvest them the first of next week.

The winter wheat and barley in the Rotation field, the Rates and Dates of winter wheat, the varieties of winter wheat, and all but two of the varieties of spring wheat, besides some barley from feed fields, have been threshed. Yields of winter wheat in the Rotations ranged from 4.7 bushels per acre on MCF, listed, to 35.8 bushels in Rotation 118, fallow, and the average was 17.7 bushels. The average yield of barley was 22.6 bushels per acre, and ranged from 11.5 bushels in Rotation II-85, disked, to 36.3 bushels in Rotation 6, on disked corn ground.

Grasshoppers are now concentrating on garden truck, and cleaning it up to a large extent.

Maximum temperature 98, minimum 47; precipitation .06 inch.

DICKINSON:

The cool dry weather of the past two weeks has been needed for the curling of harvested grain and maturing of the corn crop. Corn is a little late and as there is plenty of moisture in the soil more dry weather is needed to hasten maturity. The second date of harvesting of four corn varieties was made on the 17th. Rainbow Flint weighed out green at a little over 15 tons per acre and Northwestern Dent at just half that rate. The dry weights will not vary so much.

Wheat varieties were threshed on the 17th and 18th. Yields varied from as low as 12 bushels to 23.8 bushels. Nodak, a durum variety selected at this station from Kubanka, was the highest and four other durum varieties were higher than common wheats. Kota made 22.7 bushels and was best of the common wheats. Preston and Marquis yielded 21.0 and 19.0 bushels respectively.

Reports from early threshing in the locality indicate that the crop will average about two-thirds of that of 1922. Most of the wheat is grading 2 and 3 Dark Northern, and badly rusted fields even lower. However, the gluten content is better than last year so that new wheat is selling for five cents a bushel more than equal grade of last year's crop.

About four acres of crested wheat grass was seeded on the 14th in double rows three feet apart.

Mr. F. D. Richey, Agronomist in Charge of Corn Investigations, arrived on the 18th. Mr. John H. Martin has been here during the week working on winter wheat.

MANDAN:

Agronomy.

Weather during the past week has been favorable for all field work. Two days were cloudy and cool, but the other days were favorable for corn which is ripening normally.

Flax in the rotations is being harvested today. The indications are that the flax crop will be the best that has been produced for several years.

The second cutting of alfalfa, from the rotations and the field feeds, was hauled in during the week. It was cured in excellent condition.

The first date of harvesting corn varieties for moisture content and stage of maturity, was made during the week. This work is done in cooperation with the Office of Cereal Investigations, and the Agronomy Department of the North Dakota Agricultural College.

The soil is very dry at the present time, and the sunflowers and corn in the silage crop test are starting to dry up.
Maximum temperature 86, minimum 53; precipitation 0.

Mandan, continued:

Cooperative Grazing Experiment.

Budding has now been completed. Besides the regular budding in the nursery, a considerable amount of budding has been done in Hibernal and Virginia crab orchards, in an effort to top-work these trees to varieties of better quality. A number of black currant selections have been budded on seedling black currant stocks with the idea of growing a large amount of new wood for cuttings next year.

Compass cherries and Sapa plums are now being picked. Some of the earlier Americana varieties are also beginning to ripen. As usual, the sandcherry-plum hybrids are loaded with fruit.

Arboriculture.

Mr. A. W. Emerson is at Fort Pierre, South Dakota, and Mr. R. W. Hansen at Winnett, Montana.

Caragana, planted on August 2, began to come through the ground on the 16th. Picking seed of Tartarian maple has started today, the 18th.

Visitors of the week included Prof. Willis E. Boots and Mr. H. J. Thompson from the North Dakota Agricultural College; Mr. A. W. Henry, from the University Farm, Saint Paul; Mr. F. D. Richey, In Charge, Corn Investigations, Office of Cereal Investigations.

JUDITH BASIN:

The greater portion of the week was comparatively warm and favorable to the ripening of all small grains. The largest amount of evaporation for any single day this season occurred on August 12 when .343 inch of evaporation from a free water surface was recorded. Several days of cool, rainy weather were received during which a slow, drizzling rain occurred. Thus far during August precipitation has been received eleven out of eighteen days and consequently all harvesting has been considerably delayed.

Harvesting of oats was commenced on the rotations August 9, but the different plats show a great variation in the time of maturity and a large number of oat plats are not yet ripe. Most all of the winter wheat is ripe and barley and flax are maturing rapidly. Spring wheat, however, is still very green.

Field work has been devoted to harvesting operations on the rotations, Cereal project and increase fields of oats and winter wheat. The second crop of alfalfa hay was cut on the Forage Crop project. Increase fields of Karmont winter wheat and Hannchen barley were rogued.

Maximum temperature 90, minimum 48; precipitation .63 inch.

HUNTLEY:

Although the past week has as a whole been warmer than the preceding one this condition was tempered somewhat by light showers. Crops are looking about the same with the exception of beans which are showing marked signs of drought. Corn is short and shows many dry leaves but the grain appears to be filling and the prospects are that a fair crop will be harvested from most of the plats. Cane and Sudan grass which have been at a standstill for some time are now fully headed and seem to have started to grow again.

Field work has been interrupted by the preparations for the annual station picnic which is in progress here today. A circus in Billings, together with threshing operations throughout the neighborhood are doubtless responsible for the small crowd in attendance at the picnic.

Maximum temperature 98, minimum 50; precipitation .33 inch.

BELLEFOURCHE: Week ending August 11.

Rain fell every day for the first nine days in August. This made a total of 19 consecutive days upon which rainfall occurred. The rains varied from a trace to .92 inch. The total rainfall for August to date is 2.49 inches which is more than double the normal for the whole month.

The corn and sorghum have made a very good growth. There is enough moisture in the soil now to insure a crop of corn considerably better than the average.

Birds have been doing some damage to some of the oat plats in the dry land rotations. If the weather is favorable, it should be possible to get the dry land grains threshed the latter part of next week.

Maximum temperature 85, minimum 54; precipitation 1.78 inches.

ARCHER:

Due to heavy rains and cool weather which delayed field work and the maturity of crops the week's work has consisted of further preparation for harvest.

The precipitation, in the main, occurred August 14 and 15. That which occurred on the fourteenth came in three fairly large showers totaling .65 inch and that which came on the fifteenth consisted of two showers totaling .44 inch. There was very little run-off.

Maximum temperature 84, minimum 49.

AKRON:

Two separate rains coming on the 15th and 16th totaling .59 inch followed by cool, cloudy weather greatly benefited the corn, sorghum, and other row crops. The same rain delayed threshing through the middle of the week. Threshing operations have been confined to the Cereal Variety Experiments with barley and spring wheat, which were finished by Saturday evening. There remains about four uninterrupted days of threshing on the station.

Akron, continued:

The rotation spring and winter wheat plats, the cereal winter wheat variety plats and the rate and date experiment with Kanred, and the wheat grown on the rate and date experiment ground, remain to be threshed. Cereal nursery threshing was finished Friday evening. Opata and Sapa plums were picked during the week. The Opatas yielded from six to as high as nine gallons per tree. The trench silo was cleaned out and mended ready for filling during the damp weather. The first rate and date seeding of Kanred on the Cereal Project was made.

Maximum temperature 93, minimum 54; precipitation .62 inch.

COLBY: Week ending August 11.

Weather conditions were slightly unfavorable for threshing during the week ending August 11. But two days were dry enough to thresh this week, the 7th and 11th. Advantage was taken to finish the threshing of all experimental areas and plats with the exception of part of the barley varieties. Yields of Kanota oats in the oat variety experiments were the highest by several bushels. In the spring wheat variety plats "Prelude" was the highest yielder. Favorable yields of Marquis, Beloturka, and Kota were also secured. All spring wheat was of poor quality with the exception of Prelude.

Parts of three days were devoted to selfing work with Colby Bloody Butcher corn. Some hoeing was done on alleys and border areas.

Corn is well along and the moisture received the past week should practically "make" the corn. Sorghums are growing nicely.

Precipitation during the week was 1.48 inches.

COLBY:

Three and one-half days were devoted to threshing. We have about a day's threshing left on commercial fields when we will be through with the small grains. Work, besides threshing, including self-pollenizing corn, fall plowing, rogueing sorghums and general farm work.

Another rain of .59 inch delayed threshing somewhat. This makes a total of 2.76 inches for August to date and a total of 20.68 inches to date for the year.

Dawn kafir on the D.L.A. project is heading and milo is just commencing to head. Milo is fully headed on the June 2d date of planting. All rowed crops are looking fine. Corn and sorghums look fine throughout the county. We have not had our corn or sorghums checked by any dry weather or hot winds.

Visitors during the week included Mr. E. F. Chilcott, of the Woodward Field Station and Messrs. Hallsted and Swanson of the Hays Station.

GARDEN CITY:

Comparatively cool weather, for this time of the year, has prevailed throughout the past week. The mean maximum temperature for the week was 87.7. The lowest maximum temperature was 77, and the lowest minimum temperature was 57. Two traces of precipitation and one shower of .25 of an inch were recorded.

All row crops, except Red Amber Sorgo in the first two dates of planting, have made a rapid recovery from the hail damage received two weeks ago. Nearly all kafir in rotation has headed and milo is beginning to head.

All fallows and a part of the row crops were cultivated this week. All row crops are being cultivated to relieve the packed condition of the surface soil which was caused by the beating rain. All Sudan in rotation was cut for hay.

Maximum temperature 98, minimum 57; precipitation .25 inch.

DALHART:

Conditions in this section have been greatly improved the past week. The drought was broken with a rain netting 4.41 inches, all falling in one night. The next night netted .06 inch. These two rains put this section of the country upon its feet again. Crops have sufficient moisture now to draw on to finish the year. The prospects are the best at this time that they have been the past two years.

Harvesting was in progress when the rain came. Seven plats were harvested the day before it rained, also one plat of broom corn. The grain on the first and second dates of milo and feterita was fairly well matured and the stalks firing badly. It was deemed best to harvest these before the leaves all dropped off. At the time of the harvest there were no signs of rain. The first three dates of Sudan are harvested. There will be a good chance for a second cutting. The drilled Sudan and millet were harvested several days earlier. A light yield will be obtained from these.

The field corn is badly infested with the Southern corn stalk borer. The infestation runs about 40 to 50%. The Department Entomologist from Wichita, Kansas was here Saturday of this week, on his way to Tucumcari. He went over the crops very carefully in order to get an estimate of the infestation. In a few cases the borers are attacking kafir alongside the corn.

The birds have been giving the station more trouble this year than usual on account of the grain coming on earlier here than any place in the county. This is due to the early date plantings. It has taken constant attention in order to combat these pests. Some damage was done in spite of all precaution.

TUCUMCARI:

After seven weeks of exceptionally dry weather, the drought was broken on the night of the 16th, when 0.43 inch was recorded. This was followed the following night by a rain of 1.58 inches, making the total for the month to date, 2.11 inches. Late plats will possibly make good yields, although many of those planted in May are too nearly mature to benefit much by this delayed precipitation. Increase cane, rowed, may possibly make heavy tonnage, while much of the broadcast died before rain was received.

Soil moisture samples are being taken this date, after discontinuing this work two weeks. The soil had become so dry that dusty soil filled in the holes as fast as they were started, making it impossible to take samples. It has been very noticeable that the MCB and E milo plats, plowed last fall with four horses when it was necessary to have one man ride plow beam and when dry lumps large as wash boilers were turned up, have fired much worse than the A plats, spring plowed. Indications are that yields on the B and E plats will be the lowest of the MC milo.

During the past week all plats and increase fields have been rogued, the machine shed was erected, the 18 inch and May 1 plats of broomcorn were pulled, and increase cowpeas in the south field were cut. Some hoeing has been done on cotton plats. Unfortunately, cowpeas and Sudan, green manure, and the B plats of MC wheat and rye were plowed just before the rain. Had plowing been delayed three days a much better job could have been done, but it seemed unwise to further delay plowing.

Maximum temperature 99, minimum 60; precipitation 2.01 inches.
Evaporation 2.718 inches. Average Wind Velocity 4.4 miles per hour.

BIG SPRING:

The weather this week had remained hot and dry until Friday, August 17, when .19 inch of rain fell. Although this shower cooled things off considerably, there was not enough to help the crops any. The grain sorghums are maturing very rapidly, and it is doubtful whether a rain would help them any now. The cotton seems to be standing the dry weather very well, although it is not making very much growth.

The cowpeas in the rotations were harvested this week. Although a good quality of hay was obtained, the yields were not as high as last year. The average was a little better than three-quarters of a ton per acre. Other work consisted of hoeing out the vineyard and orchard, and in picking cowpea seed in the variety plats.

Maximum temperature 99, minimum 64; precipitation 0.

LAWTON:

The "superheated" climatic period continued without interruption until the 17th. Since that date the wind has blown from the north and the maximum temperature has been from 94 to 95. The average maximum temperature for the week, however, was 101 degrees. The maximum for the week was 107. Threats of rain appeared once or twice but without avail.

Lawton, continued:

Sorghum crops with the exception of a few late planting dates reached their point of endurance and exhaustion the fore part of the week. Since that most of the crops have been harvested and the work will be completed within a day or two. Where grain was formed it simply dried and hardened prematurely. Kafir, spaced three inches apart in the rows 88 inches apart, was the best exception to this condition and a fairly good yield will be made there. Sumac planted April 15 made the best showing among the forage sorghum tests.

Grasshoppers continue do damage cotton. Poisoned bran mash is being scattered but the hoppers come in from the surrounding grass lands as freely as ever.

Many cotton plants have not set any fruit while other plants carry from two to four bolls, usually about three. In many instances the drought is pinching these small bolls open far in advance of the normal development. Naturally a very poor grade of lint is the result and some times there is none.

Corn on the creek bottom was husked during the week and made a yield of about 20 bushels per acre.

WOODWARD:

The weather has continued hot and dry, with a maximum temperature of 107. A small shower of .25 inch Thursday night cooled the atmosphere and the leaves on the crops did not curl the next day. However, there was not enough moisture received to do any permanent good.

Kafir and milo are trying to head in spite of dry weather.

Threshing is about completed in this county and yields of wheat are good considering the season, but the farmers are very much discouraged on account of low prices on wheat and poor outlook for row crops. I understand that about the best price paid for wheat in this section has been 82¢ delivered at the elevator in Woodward.

Several hundred pounds of grapes and several bushels of plums have been picked. Other work on the station has consisted of cultivating, cleaning up scattering weeds around corners, repairing machinery, etc.

Mr. E. F. Chilcott left on the 14th for Hays, Kansas.
Maximum temperature 107, minimum 63; precipitation .25 inch.
Average wind velocity 6.3 miles per hour.

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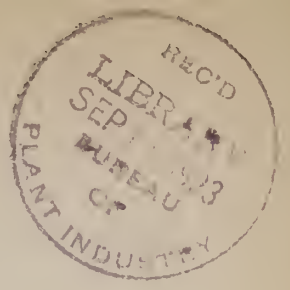

WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

AUG 25 1923

REPORT FOR WEEK ENDING AUGUST 25, 1923.

HAVRE:

Weather during the week has continued rather cool, with rain on two days totaling .86 inch.

Corn continues to grow but is not maturing rapidly. Late seeded small grain is also ripening slowly but is making heavy grain.

The latest of the oat varieties were harvested as well as the last of the spring wheat on the rotations. Some of the reseeded winter wheat plats were mowed, as the weeds were making a heavy growth.
Maximum temperature 88, minimum 48; precipitation .86 inch.

JUDITH BASIN:

The week has been moderately warm with only a couple of days of cool weather. As usual, an abundance of rain was received, precipitation occurring approximately four days out of the seven. A heavy rain of approximately 24 hours duration was received on the 20th and 21st which totaled 1.13 inches of rainfall for the entire month. A total precipitation of 16.15 inches has been received to date since January 1, as compared with an average annual rainfall of 15.61 inches.

Conditions have been almost ideal for crop growth and comparatively more favorable for the maturing of small grains. Most of the oats, barley and flax on the rotations ripened during the week and spring wheat is rapidly turning color. Corn and other late crops have made an exceptionally good growth. The yield of sunflowers will approximately be at least double that ever before secured at this station and a bumper crop of spring wheat, corn, and potatoes is practically assured.

Considerable stem rust has appeared on the late maturing varieties of spring wheat on the station this year, 100 per cent of the stalks being affected in some instances. The occurrence of wheat rust in the Judith Basin is very unusual, if not unknown, prior to this year.

Grasshoppers have been very numerous and are doing considerable damage to late crops and early seeded fields of winter wheat. Repeated applications of poisoned bran mash have been necessary to protect the experimental plats but some damage has been done, nevertheless, to barley, flax and oats.

The remainder of the oats and practically all of the winter wheat, barley and flax on the rotations were harvested during the week. Harvesting operations have also beein in progress on the Cereal project, and the weighing of hay on the Forage Crop project is nearly completed. Other field work consisted of mowing weeds and cultivating green manure plats, fallow plats, and fallow fields.

Mr. J. H. Martin and Mr. F. D. Richey were visitors at the station during the week.
Maximum temperature 86, minimum 48; precipitation 1.22 inches.

HUNTLEY:

A heavy rain amounting to 1.20 inches early in the week delayed threshing operations until the 24th. Winter wheat, spring wheat, rye and barley threshing have been completed and a start made on the oats. There is a wide variation of yields in the crops threshed to date. For winter wheat this range is from 1.5 bushels on "stubbled in" ground to 36.6 bushels per acre on plat K of the Methods of Fallow test. The yields of spring wheat run from 4.7 bushels on MCB to 28.2 bushels on fallow in rotation 570. Barley returns were extremely light, the maximum being 11.1 bushels in rotation 54 and the minimum 1.3 bushels from MCB. The quality of the winter wheat was very good but most of the spring wheat was more or less shrunken and the barley was very light and chaffy. Average yields have not yet been figured but with the exception of barley the returns appear to be about equal to the average of former years.

The abundant rainfall will do much toward making a good corn crop on these plantings not too badly stunted by the drought of a month ago. Late plantings of corn appear to be in much better condition than the early plantings this season, as the former passed through the drought and hot weather period when the crop was too young to be greatly influenced by these factors.

Mr. Richey, of the Cereal Office, was a visitor at the station today. Maximum temperature 95, minimum 50; precipitation 1.20 inches.

SHERIDAN:

Threshing of small grains on the station with the exception of flax and one seeding date of spring wheat not yet harvested was completed this morning. The last of the flax was harvested during the week, but is not yet ready to thresh.

Yields of spring wheat in the Rotations ranged from 9.0 bushels per acre on MCF, listed, to 32.8 bushels on plat M, Methods of Fallow. The average yield of all plats was 21.6 bushels per acre. With the Spring wheat varieties, Hard Federation made the highest yield, 33.8 bushels per acre. Kota ranked fifth this year, yielding 27.3 bushels. Pioneer which had averaged the highest up to this year was badly shrunken by the heat and ranked next to the lowest, yielding at the rate of 22.4 bushels.

Of the oats varieties, Sixty Day gave the highest yield, 83.8 bushels per acre, and now has the highest average of any variety here. Iowa 103 ranked next with a yield of 55.0 bushels and Victory and Early Mountain next, yielding 54.2 bushels each.

The highest yield of barley was secured from Trebi, which yielded 74.8 bushels per acre.

The varieties of millet and some of the Sudan grass on breaking have been harvested, also one variety of cowpeas. Corn in the Rotations is beginning to ripen, there being some hard corn now. Several of the corn varieties aside from the flints are ripening also.

Sheridan, continued:

Harvesting in this locality is just about finished, and threshing is being started. Some of the grain is yielding well, but some is yielding very low.

Maximum temperature 93, minimum 40; precipitation .39 inch.

DICKINSON:

Most of the week has been spent in threshing. With the exception of flax the main Rotations and cereal varieties were completed. Work was started on the grass varieties also but a shower on the afternoon of the 24th stopped the machine.

Wheat yields on the Rotations were below the station average but both oats and barley were better than average. Yields after the tillage methods and the 1923 average of wheat, oats and barley are given below:

	Disked Corn	Spring Plowed	Fall Plowed	Fallow	Green Manure	Sod	Average 1923	Average 1908-1923
Wheat	20.2	15.9	16.4	19.2	16.7	-	18.1	18.4
Oats	45.7	44.4	35.0	64.2	58.7	40.6	45.9	37.7
Barley	30.8	25.7	22.3	35.0	-	-	27.9	23.6

In 1922 wheat averaged 30 bushels, oats 73 bushels and barley 43.6 bushels.

Winter wheat and rye were seeded on the Rotations on the 25th as the soil was in excellent condition following the shower. Winter wheat varieties were also seeded in grain stubble on the same day. Crested wheat grass seeded on the 14th and 15th was emerging on the 24th.

Corn has matured rapidly in spite of the cool weather and most of the crop is now far enough advanced for silage. In early varieties some seed could be picked.

Maximum temperature 90, minimum 35; precipitation .49 inch.

MANDAN:

Agronomy.

Some Northwestern Dent seed corn was picked on the 22nd. and 23rd. Corn is further advanced than last year at this season of the year, and promises to yield considerably better.

Threshing has been in progress all week. The Cereal variety plats were finished on the 23rd and threshing on rotation grains was commenced on the 24th. The best yield of durum wheat in the rotations was 19.3 bushels per acre. The poorest--disked in on oats stubble--was less than a bushel to the acre.

The weather for the week has been good for threshing, no rain to interfere with the work, and light winds.

Maximum temperature 87, minimum 41; precipitation .10 inch.

Mandan, continued:

Cooperative Grazing Experiment.

The acre units in the mowing experiment were cut during the week. The units that are mowed annually yielded about 250 pounds per acre, while those out every other year yielded about 700 pounds per acre. The hay from the units cut annually was of much better quality than the others. The hay was shipped to the North Dakota Agricultural College, where it will be used in a feeding experiment.

Both the brome-grass pasture and the 30-acre pasture are getting very short and the cattle will, no doubt, have to be removed soon.

Horticulture.

Compass cherries and early maturing varieties of American plums have been picked. Yields were generally good but the quality of the fruit was not very good, mostly on account of hail injury. Some of the Minnesota hybrid plums, including Red Wing and Tonka, are now ripening and appear very promising on account of their large size and good quality.

Vegetables are being harvested as they ripen in the acre garden. Yields are generally above normal, and the garden is looking good. The fields are now being hoed for the last time this season. Other work included washing seed, budding, and picking Ever-bearing strawberries.

Visitors of the week included Mr. R. L. Davis, Fibre Plant Investigations. Mr. J. M. Stephens left the station this morning for Akron, Colorado.

ARCHER:

The weather has been cool with high humidity. However, the last couple of days have given hope of the much needed dry warm weather. The mean maximum and minimum temperatures during the week were 74.9 and 50 degrees respectively.

During the fore part of the week the work at the station consisted of preparation for the swine feeding experiment and during the last part harvesting occupied the time. The millet for hay has been cut and shocked. The increase Kota, varieties of barley, early oats, flax and Dry-Land plats of flax have been harvested.

E. F. Chilcott, A. L. Hallsted, A. F. Swanson, F. E. Kempton and Mr. Cotter visited the station during the week.
Maximum temperature 81, minimum 48; precipitation .18 inch.

ARDMORE:

Precipitation from August 1 to 25, inclusive, has amounted to 2.90 inches. The 11-year normal for the same month at this station is 1.18 inches. The increased rainfall has had a very beneficial effect upon corn and cane crops as well as on the second crop of alfalfa. The corn and cane crops at this station will be better than usual in fields that were not destroyed by hail.

Threshing of rotation plats and field of small grain has been completed with the exception of flax, which has not been harvested. The following are some of the most important yields:

Crop	Field Number	Acreage	Treatment	Yield Grain Per acre.
Oats	2	1.64	On disked corn land	65.6
Oats	5	1.33	On disked corn land	63.8
Oats	5	1.33	On disked cane land	60.1
Oats	12	62.00	On disked cane land	35.2
Oats	14	30.00	On disked corn land	55.9
Barley	19	22.50	On disked corn land	36.1
Wheat	5	1.33	On disked corn land	24.1
Wheat	5	1.33	On disked cane land	16.6
Oats, average yield rotation plats				60.0
Spring Wheat			Do	24.6
Winter Wheat			Do	17.4
Barley			Do	43.5

The highest yield of spring wheat was 30.8 bushels per acre on rotation No. 14-A. The lowest 15.5 bushels on rotation M.C.F.

The highest yield of oats was 86.3 bushels per acre on rotation No. 3-C. The lowest 28.1 on rotation No. 248-B.

The highest yield of barley was 56.3 bushels per acre on rotation M.C.D. The lowest 27.7 bushels per acre on rotation No. 86-C.

The highest yield of winter wheat was 26.2 bushels per acre on rotation No. 85-E. The lowest 12.2 bushels per acre on Rotation M.C.A.

AKRON:

Threshing was resumed the first of the week and completed Friday evening. The spring wheat on the Rotation Project was threshed Monday, followed by the winter wheat on the same project Tuesday. The Kanred on the Rate and Spacing corn ground was threshed Wednesday. Threshing was thereafter started on the Cereal Project and this completed Friday evening. Winter wheat on the Rotation Project gave high yield of 7.4 bushels per acre on plat C of the M.C. Series. Plat F of the same series returned no yield whatever. Spring wheat gave high yield of 9.2 bushels per acre on Plat C of Rotation 9; low yield of 1.5 bushels per acre was obtained from Plat C of Rotation 32. Kanred on the Rate and Spacing corn ground, which looked to be the best winter wheat on any of the tenth acre plats, yielded slightly better than 10 bushels per acre.

Akron, continued:

Mr. E. C. McCarty of the Botany Department of the State Agricultural College, together with his son, spent Monday and part of Tuesday here in the interest of the Cooperative Sheep Grazing Project. Mr. T. R. Stanton of the Cereal Office spent Monday here in the interest of the oat work. The Honorable Josephus Daniels, formerly Secretary of the Navy, at Akron to fill a Chautauqua engagement, was driven to the station by some of the business men for a short inspection of the work. Mr. E. F. Chilcott of the Woodward Station and Messrs. A. L. Hallsted, and A. F. Swanson of the Hays Station visited the station parts of Thursday and Friday.

Maximum temperature 89, minimum 46; precipitation 0.

NORTH PLATTE:

There has been no rain for ten days. This is the longest period without rain since early in July. A dry spell was needed to allow farmers to thresh and put up alfalfa. Dry weather will also hasten the maturity of corn. The crop is immense but much of it is somewhat late and will need a full, or later than normal, season to ripen up well. A minimum temperature of 43 was reached on the 21st.

Messrs. E. F. Chilcott, A. L. Hallsted, and A. F. Swanson visited the station on the 18th.

COLBY:

We have had several cool nights the past week, the minimum temperature recorded has been 45 degrees. The latter part of the week has been warmer, the thermometer registering 95 today, one of the hottest days of the year.

Milo and kafir on the D.L.A. Project are well headed out and with normal growing weather and normal date of killing frost a large crop of grain should be produced. Corn promises one of the best yields of grain that we have ever had. We need warm weather for the sorghums and corn to ripen them as we have sufficient moisture in the soil to carry them to maturity. Neither sorghums or corn have suffered at any time from lack of moisture or from hot winds.

Seed is well set on the June 1st date of planting milo and kafir. Feed crops of Sumac sorgo and Sudan are in excellent condition. One field of Sudan will be harvested the first of the coming week.

With the exception of one day's work packing, the ground is prepared for seeding winter wheat. All fallow plats were cultivated with the spring tooth harrow during the week. Some fall plowing for spring crops was done the past week. One small field of Reed's kafir looks fine. The sorghum varieties are growing fine, but the later ones will not have time to mature before frost. One load of wheat was sold during the week, which was unfit for seed, at 68¢ per bushel.

GARDEN CITY:

Low temperatures have prevailed again this week. On Tuesday night a minimum temperature of 46 was recorded. Low temperatures during the night and cloudy days have not been conducive to rapid growth in the sorghum crops.

Crops are rolling some today, but so far no firing has taken place. All kafir and milo in rotation has headed and is looking good.

Fall plowing for wheat was completed this week. The first date of planting of winter wheat was made on the 20th.

A great deal of time this week was spent in getting ready for the annual picnic and field day which will be held at the station on the 31st.
Maximum temperature 94, minimum 46; precipitation 0.

DALHART:

Conditions are very favorable at this writing. The weather has been somewhat more comfortable with plenty of precipitation. The rainfall in this section the past week has been spotted but it seems that most every section has had its rain. The precipitation recorded at the station was .79 inch. The section just east of Hartley was accommodated with what they term a barrel full. While it is not known just what was recorded there it can be seen that there was a very heavy downpour. All lakes over this section are full of water. There was a considerable amount of run-off.

Cropping conditions are looking unusually good. All crops are making good headway now and are coming to the front. From present indications the crops will yield considerable above the average in this section. A little farther east the crops are not so good as here. Between Hartley and Dumas some fields are looking fine while others are in bad shape due to the earliness of planting. The late plantings are the ones that will make good this year. Between Dumas and Spearman some fields look as if they will make bumper yields while others are poor. In each case the crop looked good in proportion to the way it was farmed. Where a farmer actually worked for the good of the crop it is growing accordingly. East of Spearman there is a great deal of wheat that is not threshed. The row crops in this section are few but some of these are looking good. Between Canadian, Texas, and Woodward, Oklahoma, the crops are only fair. The crops at the Woodward Station are looking good.

The fields here have been too wet for any work all week. Nothing can be started until the first of next week. Some mowing has been under way on roadways. Two varieties of cowpeas were picked today.

Mr. H. N. Vinall visited the station this morning then accompanied the County Agent on a tour over the county to look over the dwarf feterita crops where farmers were furnished seed by this office.

TUCUMCARI:

Rains measuring 2.01 inches on the 16th and 17th were followed by a heavy rain, 1.91 inches, accompanied by a high wind and a small amount of hail the afternoon of the 21st. Since this rain lasted only one hour and a half, run-off was high and some washing occurred. Plants on some plats were uprooted by the high wind, while leaves on most plats were split to some extent by the hail. Hail and wind injury were comparatively light on the station, however. Late crops in this locality should now make good yields, although early planted crops were too near maturity to be materially benefited by the recent rains.

All crops, except milo which was practically ripe, have grown well since the rains and promise to make fair yields. Should warm weather continue for six weeks the late date plats would doubtless make unusually high yields. Weather the past week has been unusually cool, possibly a forerunner of an early fall.

Several plats of broomcorn were pulled the past week, a portion of the sewer line was taken up and cleaned out, late date plats were cultivated, all plats were rogued, and one man has been kept in the fields shooting birds.

Mr. J. R. Horton, of Wichita, spent several days at the station continuing his studies on the corn borer. He drove overland and reported exceptionally heavy rains from Liberal, Kansas to Tucumcari. He visited the Dalhart Station and reported the corn borer very prevalent there, although he was unable to find this pest at points farther north. From Tucumcari the return trip included Las Vegas, thence north toward Trinidad and on to Wichita. Corn fields will be examined enroute.

Maximum temperature 88, minimum 56; precipitation 1.91 inches. Evaporation 1.301 inches. Average Wind Velocity 3.4 miles per hour.

BIG SPRING:

Good rains have fallen all around here, but the station has only received .38 inch during the week. However, this helped to moderate the temperature considerably, for the weather has been comparatively cool all the week.

All the sorghums are ripening very fast and will soon be ready to cut. Some of the cotton, which was planted early, has started to open. The first bale was ginned in this county August 21, which time was about a week earlier than last year.

Work this week has consisted of hauling in Sudan grass from the increase field, and in harvesting Sudan grass for seed. Red Amber, Orange Sorgo, and Frieds sorgo of the forage sorghums was harvested this week.

Mr. B. M. King, of the Cotton Office, spent a few days here this week making cotton selections and in roguing the increase seed blocks.

Maximum temperature 90, minimum 55; precipitation .38 inch.

LAWTON:

Drought and heat were quenched by a rain of 1.01 inches on August 22. This rain fell very gently and the run-off was reduced to a minimum. Since that date the maximum temperature has ranged from 73 to 91 and the minimum has hovered close to 60 degrees.

This rain will be of some benefit to the very late planted sorghums. Cotton bolls which were being pinched open by the drought may also approach a more normal maturity. However, the ground is dry to such a depth that the beneficial effects of this rain would soon disappear should a hot wave develope.

The surface soil is sufficiently moistened to prepare a seed bed for wheat on land that has been plowed early. All wheat land on the station is now in shape for seeding. With the exception of the rate and date tests such seeding will not be done until about the middle of October and the surface may be very dry by that time.

WOODWARD:

The weather has remained dry although it has not been quite as hot as for the past three weeks. There have been a few local rains but all have missed the station with the exception of one small shower of .06 inch.

About 2650 lbs. of grapes were picked on Monday and Tuesday, many of these being very nice in spite of the very dry weather.

Mr. Clemmer, of the Dalhart Station, visited the station on Tuesday. Mr. L. F. Locke, of the Station, attended the Farm Congress at Stillwater, Oklahoma, and gave an address on Varieties of Grapes for Northwestern Oklahoma.

Crops around Woodward appear to be in as good condition if not better than others seen during the trip to Stillwater. In some places it has been so dry that cotton is opening abnormally and in other places it is wilting and has shed part of its leaves. Most of the corn and a good deal of the sorghums are dried up beyond redemption. A few scattering fields of corn were noticed that apparently made a fair crop before the dry weather affected it.

Maximum temperature 98, minimum 50; evaporation 2.033 inches.